

2d, 11 a. m., westerly, information, Lakes Huron and Michigan, Sault Ste. Marie section, Marquette section, and Houghton section; 10.50 p. m., northwest, storm, Sandy Hook to Eastport.

3d, 11.50 a. m., west, information, Buffalo.

4th, 5.20 p. m., westerly, information, Lakes Superior, Michigan, and Huron.

6th, 10.10 a. m., southeast, storm, Lakes Michigan and Superior, except easterly, information, Duluth; 5.30 p. m., easterly, information, Lake Huron; 11 p. m., easterly information, Lake Erie.

7th, 10 a. m., east, information, Lake Michigan.

8th, 7.30 p. m., southwest, storm, Lake Erie; 11 p. m., storm, southwest, Lakes Ontario and Erie, except Erie and section; 11 p. m., information, Sandy Hook to Eastport.

9th, 7.40 a. m., Buffalo, changed to storm, northwest.

10th, 9.55 a. m., storm, northeast, Detroit; 10.20 a. m., storm, northeast, Milwaukee, Chicago, Grand Haven, Ludington, and Manistee; 10.30 a. m., northeast, Narragansett section and Woods Holl section; 11.30 a. m., storm, southeast, Lakes Erie and Ontario; 4.15 p. m., storm, northeast, New York to Boston, except Narragansett and Woods Holl sections; 4.15 p. m., southeast, storm, Sandy Hook to Norfolk section.

11th, 11 a. m., northeast, storm, Sandy Hook to Boston; 11.15 a. m., continued southeast, storm, on Lakes Erie and Ontario; continued northeast, storm, Narragansett and Woods Holl section.

12th, 11.15 a. m., continued storm, southeast, on Lakes Erie and Ontario; 11.15 a. m., continued northeast, storm, Narragansett and Woods Holl section; 1 p. m., changed to storm,

northwest, Lake Erie; 3 p. m., changed to storm, northwest, Lake Ontario; 11 p. m., changed to storm, northwest, Sandy Hook to Boston section.

13th, 11.15 a. m., storm, northwest, Portland and Eastport; 1 p. m., continued storm, northwest, Buffalo.

14th, noon, changed to storm, southwest, Buffalo.

15th, 10 p. m., storm, southeast, Chicago, Milwaukee, Grand Haven, Manistee, and Ludington.

16th, 10.30 a. m., changed to storm, northwest, Chicago, Milwaukee, Grand Haven, Manistee, and Ludington; 11 p. m., storm, southwest, Breakwater to Eastport.

20th, 10 p. m., storm, southwest, Chicago, Milwaukee, Grand Haven, Manistee, and Ludington.

21st, 10 a. m., changed to storm, northwest, Chicago, Milwaukee, Grand Haven, Manistee, and Ludington.

24th, 11.30 p. m., storm, southeast, Woods Holl section to Eastport; 11.40 p. m., storm, southeast, Narragansett section.

26th, 11.20 a. m., storm, northwest, Port Eads, New Orleans, Mobile, Pensacola, and Jacksonville section to Washington, N. C.; 11 p. m., storm, northeast, Norfolk section to Woods Holl section.

27th, 10 a. m., storm, northwest, Lake Michigan; storm, northeast, Portland and Eastport; 11.30 a. m., changed to storm, northwest, New Haven to Woods Holl section and New York to Norfolk section; 10 p. m., changed to storm, northwest, Boston to Eastport; 11.20 p. m., storm, northwest, Galveston.

28th, 11 a. m., storm, northwest, Port Eads to Pensacola; 10.20 p. m., storm, northwest, Cedar Keys to Sandy Hook.

29th, 5.30 p. m., storm, northwest, Narragansett section.

## ATMOSPHERIC ELECTRICITY.

### GENERAL STATISTICS.

The table showing in detail for December, 1894, the statistics relative to auroras and thunderstorms is placed among the meteorological tables as No. XI, instead of being given in the text as heretofore. It shows the number of stations from which meteorologic reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month.

### THUNDERSTORMS.

A mention of the more severe thunderstorms reported during the month is made under "Local storms." The dates on which reports of thunderstorms were most numerous were: 1st, 20; 8th, 73; 9th, 31; 10th, 38; 11th, 67; 12th, 66.

The States where thunderstorm reports were most numerous were: Alabama, Florida, Georgia, Louisiana, Missouri, North Carolina, and Ohio.

The States where the dates of thunderstorms were most frequent were: Louisiana, where they were recorded on eight days; Missouri, eight days; North Carolina, six days.

### AURORAS.

The evenings on which bright moonlight must have inter-

fered with observations of faint auroras are assumed to be the four days preceding and following the date of full moon, viz, from the 8th to the 16th, inclusive. On the remaining twenty-two days of this month 35 reports were received, or an average of about one per day. The dates on which the reported number especially exceeded this average were: 15th, 3; 18th, 3; 21st, 3. The States from which auroras were reported by a large percentage of observers were: Indiana and North Dakota.

The States where the dates of auroras were most frequent were: Wisconsin, 7; North Dakota, 6; Indiana, 5.

Canadian data.—December, 1894.

Stations.	Dates of thunderstorm.	Dates of auroras.
Quebec, Que.....	.....	6, 27
Toronto, Ont.....	.....	15
Minneapolis, Minn.....	.....	6, 21, 22
Medicine Hat, Assin.....	.....	9, 10
Edmonton, Alberta.....	.....	4, 7, 13

### DAMAGE BY LIGHTNING.

No reports have been received of damage done by lightning during December.

## METEOROLOGY AND MAGNETISM.

The movements of our atmosphere are to be studied primarily as problems in the mechanics and thermodynamics of moving gases and vapors, but our knowledge of the empirical relations between atmospheric phenomena and terrestrial magnetism has been elucidated by a few special students, and

further study in this direction has been recognized by the Chief of the Weather Bureau as proper and desirable. As the subject of atmospheric electricity, including that of auroras and earth currents, has a small section in this REVIEW, Professor Bigelow contributes the following section on terrestrial magnetism.